Office Action Summary	Application No.	Applicant(s)	
	10/550,529	HIRANO ET AL.	
	Examiner	Art Unit	
	OMONIYI A. OBAYANJU	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *50-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *50-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/18/2010 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 50-60 have been considered but are moot in view of the new ground(s) of rejection.

However, the Examiner further reviewed Applicant's argument with respect to the prior art reference of record which have been found not persuasive.

In regards to the secondary prior art reference (Chuah et al.), Applicant argued and/or stated that "Chuah does not disclose that the minislots are divided by "a time slot dividing section" included in a radio communication apparatus, recited by claim 50". Furthermore, Applicant stated that "*the base station (not the remote hosts) is also very likely the entity that divides the minislots into various groups and thereafter*

"assign[s] different priorities to the remote nodes attempting to gain access to the system" based on MAC addresses of the remote hosts, which is useful, for example, during emergency communications. ***Since the base station of Chuah is not the same as the radio communication apparatus recited by Applicants' claim 50*** *(the base station does not use a time slot at a "high priority" and then divide its own time slot upon detecting a contention), Chuah fails to teach or suggest a radio communication apparatus which divides its own time slot, as recited by Applicants' claim 50".*

In response, the Examiner respectfully disagrees with Applicants arguments. The claim does not uniquely and particularly define the term **"radio communication apparatus"** so as to distinguish from the applied prior art. During patent examination, the claims must be given their broadest reasonable interpretation. See also MPEP §2111. The term **"radio communication apparatus"** is broadly claimed, therefore, broadly interpreted. Broadly interpreted, **"radio communication apparatus"** is fairly characterized as a communication device in a wireless communication system e.g. base station and/or remote node (which performs the uplink transmission) (fig. 8). Therefore, the remote host inherently divides its' own slot, for uplink transmission.

Furthermore, Applicant argues that "one skilled in the art at the time of the present invention would not have been motivated to combine the prior art references to arrive at the invention recited by claim 50, and in fact Haartsen, Montano, Chuah and Le likely cannot even be reasonably combined". Applicant further specifically argued that Haarsten "teaches away" because Haartsen teaches "a contention resolution scheme

where the right to transmit on the communication channel is assigned in the form of a "pseudo-token," and access to the communication channel is grantedby a pseudo-token".

In response, the Examiner respectfully disagrees with Applicant's arguments. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). Furthermore, the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed…." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). See MPEP 2123.

Therefore, as presented in the office action, Haarsten does not criticize, discredit or otherwise discourage the claimed limitation i.e. "a time slot dividing section that divides the time slot into a plurality of slots". Thus it would have been obvious to one of ordinary skill in the art at time invention was made to reasonably combine the teachings of Haarsten with the dividing slots solution of Montano (col. 2, lines 65-67, and col. 16, lines 1-5) to achieve the goal of accurately managing the transmission of data in a communication system to prevent or avoid signal or data collision in the channel and to carrying out desired communication between a controlling device and non-controlling devices.

Response to Amendment

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 50, 51, 53-60, are rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (US Publication No. 20020126692) in view of Montano et al. (US Patent No. 7280518) and further in view of Chuah (US Publication No. 20030214928).

As **to claims 50 and 60,** Haartsen teaches a radio communication device in whose communication area another radio communication device operates, comprising: a time slot being used at a high priority by the radio communication device, within the communication area of the radio communication device (pg. 2, pp0015, lines 1-10); and a contention resolution, section that performs contention resolution processing when the

detection section detects an overlap (fall on the same time slot) based on the other communication device operating during the time slot (pg. 4, pp0042, lines 1-15). However, Haartsen fails to teach a detection section that detects an operation of the other radio communication device during a time slot, and that said contention resolution section comprising: a time slot dividing section that divides the time slot into a plurality of slots, and a slot setting section that sets one of the plurality of divided slots to the radio communication device as a higher priority slot, and sets another of the plurality of divided slots to the other radio communication device as a lower priority slot.

But, Montano teaches a detection section that detects an operation of the other radio communication device during a time slot (fig. 3, #350, and col. 2, lines 65-67), and that said contention resolution section comprising: a time slot dividing section that divides the time slot into a plurality of slots (col. 16, lines 1-5). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haartsen with the teachings of Montano to achieve the goal of accurately managing the transmission of data in a communication system to prevent or avoid signal or data collision in the channel and to carrying out desired communication between a controlling device and non-controlling devices.

However, both Haartsen and Montano failed to explicitly teach that a slot setting section that sets one of the plurality of divided slots to the radio communication device as a higher priority slot, and sets another of the plurality of divided slots to the other radio communication device as a lower priority slot.

But, Chuah teaches a slot setting section that sets one of the plurality of divided slots to the radio communication device as a higher priority slot, and sets another of the plurality of divided slots to the other radio communication device as a lower priority slot (pg. 7, pp0092). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haartsen and Montano with the teachings of Chuah to achieve a communication system that can accurately and reliably provide communication access or channel assignment to efficiently transfer data information and to overcome delays in a communication system.

As **to claim 51,** Haartsen in view of Montano and further in view of Chuah teaches the limitations of claim 50 as discussed above.

Montano further teaches wherein the radio communication device detects a number of other radio communication devices operating in the communication area (fig. 3, #350, and col. 2, lines 65-67), and the time slot dividing section divides the time slot based on the number of other detected radio communication devices (col. 16, lines 1-5). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haartsen with the teachings of Montano to achieve the goal of accurately managing the transmission of data in a communication system to prevent or avoid signal or data collision in the channel and to carrying out desired communication between a controlling device and non-controlling devices.

As **to claim 53,** Haartsen in view of Montano and further in view of Chuah teaches the limitations of claim 50 as discussed above.

Haartsen further teaches a time slot identification information sending section that sends identification information of the higher priority slot to the other radio communication device (pg. 2, pp0018, lines 13-17), so that the other radio communication device selects the lower priority slot based on the identification information of the higher priority slot (pg. 2, pp0012-pp0017).

As **to claims 54 and 55,** Haartsen teaches further comprising a higher priority communication section that accesses a wireless medium, in the higher priority slot, using a waiting time shorter than another waiting time used for the other radio communication device (pg. 6, pp0049, lines 1-14).

As **to claim 56,** Haartsen in view of Montano and further in view of Chuah teaches the limitations of claim 50 as discussed above.

Montano further teaches wherein the time slot division section is so arranged as to divide a communication period corresponding to the time slot evenly (fig. 9, #940) into the plurality of slots (col. 14, lines 45-55), the communication period having a common period which is determined among the radio communication devices (col. 15, lines 1-10). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haartsen and Montano to achieve the goal of accurately managing the transmission channel of a communication system to prevent or avoid signal collision in the channel.

As **to claim 57,** Haartsen in view of Montano and further in view of Chuah teaches the limitations of claim 56 as discussed above.

Montano further teach comprising a synchronization section that synchronizes with the other radio (non-coordinating) communication devices regarding the common period (col. 7, lines 52-55). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haartsen and Montano to adequately and efficiently sync wireless terminals over an allocated time in a communication system.

As **to claim 58,** Haartsen in view of Montano and further in view of Chuah teaches similar limitations as discussed in claim 51 above.

As **to claim 59,** Haartsen teaches wherein the radio communication device detects a number of other radio communication devices operating in the communication area, and further comprises a time slot resetting section that resets the time slot by decreasing the divided slots in the time slot based on the number of the other detected radio communication devices, when the detection section detects that the other radio communication device, which uses the lower priority slot, shuts down (pg. 5, pp0042, lines 13-15).

Claims 52, is rejected under 35 U.S.C. 103(a) as being unpatentable over Haartsen (US Publication No. 20020126692) in view of Montano et al. (US Patent No. 7280518) and Chuah (US Publication No. 20030214928) and further in view of Le et al. (US Patent No. 7154877).

As **to claim 52,** Haartsen in view of Montano and further in view of Chuah teaches the limitations of claim 50 as discussed above. However they failed to teach

wherein the contention resolution section comprises an exchanging section that exchanges identification information of the radio communication device with identification information of the other radio communication device, and the slot setting section is so arranged as to select the higher priority slot which can be used at a higher priority by the radio communication device, based on a comparison result of the identification information of the radio communication device with the identification information of the other radio communication device.

But Le teaches wherein the contention resolution section comprises an exchanging section that exchanges identification information of the radio communication device with identification information of the other radio communication device, and the slot setting section is so arranged as to select the higher priority slot which can be used at a higher priority by the radio communication device, based on a comparison result of the identification information of the radio communication device with the identification information of the other radio communication device (col. 6, lines 30-52). Thus it would have been obvious to one of ordinary skill in the art at time the invention was made to combine the teachings of Haartsen and Montano with the teachings of Chuah and Le to achieve a communication system that can accurately and reliably provide communication access or channel assignment to efficiently transfer data information and to overcome delays in a communication system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMONIYI A. OBAYANJU whose telephone number is (571)270-5885. The examiner can normally be reached on Mon - Fri, 7:30 - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent P. Harper can be reached on 571-272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. A. O./
Examiner, Art Unit 2617

/Jinsong Hu/
Supervisory Patent

Examiner, Art Unit 2617